

## Linear Functions: Student Worksheet

Payless Car Rental charges a base rate of \$20 dollars and \$0.30 a mile. Complete the chart and write a function to express the relationship between the miles driven and the cost of renting.

Miles driven	Process	Cost C(x)
2	$20 + 2(.30)$	
5		
10		
20		
50		
x		

1. What does your independent quantity represent?

2. What does your dependent quantity represent?

3. Plot your data and show what each axis represents by labeling it appropriately using a squared sheet.

4. State a reasonable domain and range for your function:

Domain:

Range:

5. What is the slope of your line? What does it represent?

**6. What is the y-intercept of your line? What does it represent?**

**7. Is the graph increasing or decreasing? How do you know?**

**8. How far can you drive if you can only spend \$100?**

**9. Write a new function to reflect a change in the basic rate to \$25. Make a graph.**

**10. How would this change affect your graph? Compare the graph to the first graph. Describe in different ways (algebraically, numerically in tables, or by verbal descriptions).**

**11. Write a new function to reflect a basic rate of \$20, but a cost per mile of \$0.25. Make a graph.**

**12. How would the graph of this new function compare to the first graph? Describe in different ways (algebraically, numerically in tables, or by verbal descriptions).**

**13. Input your first function into  $Y_1$  on a graphing calculator. Use your domain and range to help you set your viewing window. Graph your function and determine how much it**

would cost to drive for 200 miles by tracing or using the table feature of your calculator.  
Graph your other functions (#9, #11) and check your graphs.